

## **REMARKS**

### I. Status of the Claims and the Rejections

Applicants have amended the specification to include section headings, correct a typographical error, and recite the priority claim acknowledged in this application. Applicants have also amended the Abstract to remove reference numbers. Applicants respectfully request that these amendments be entered.

Claims 1, 3, 9, 13, 14 and 20 were objected to for various alleged informalities. For example, claim 1 included the phrase "bring this back." Applicants have amended claims 1, 3, 9, 13, 14 and 20 generally in accordance with the Examiner's suggestions, thereby providing proper grammar, spelling, and antecedent basis in these claims. Applicants respectfully request that the objections to the claims be withdrawn.

Substantively, claims 1-3, 5-10, 12-17, 20, 22 and 23 were rejected for alleged lack of novelty under 35 U.S.C. § 102 based on Simadiris U.S. Application Publication No. 2003/0042361 ("Simadiris"). Claim 4 was rejected for alleged obviousness under 35 U.S.C. § 103 based on Simadiris in view of Fischer U.S. Patent No. 5,513,500 ("Fischer"). Claim 11 was rejected for alleged obviousness under 35 U.S.C. § 103 based on Simadiris in view of Nikly U.S. Patent No. 5,553,576 ("Nikly"). Claim 18 was rejected for alleged obviousness under 35 U.S.C. § 103 based on Simadiris in view of Pearson U.S. Patent No. 4,744,408 ("Pearson"). Claim 19 and 21 was rejected for alleged obviousness under 35 U.S.C. § 103 based on Simadiris in view of Pearson and Temmyo U.S. Application Publication No. 2002/0134095 ("Temmyo"). Applicants respectfully traverse these rejections.

However, applicants have amended independent claim 1 to further clarify the subject matter regarded as patentable. Applicants have also amended claims 3-23 and have

canceled claim 2 in this response. In view of these amendments and the following remarks, applicants respectfully request reconsideration and allowance.

II. Claims 1, 3, 5-10, 12-17, 20, 22 and 23 are Novel

A. The Claims

Independent claim 1 recites a cooling system for the cooling of heat producing devices in an aircraft. The cooling system includes a central cold producing device including at least two cooling machines working independently of each other. The cooling system also includes at least one cold consumer and a cold conveyance system connecting the cold producing device and the at least one cold consumer. The cold conveyance system includes at least two cooling circuits completely independent of each other. The two cooling circuits supply a cold carrier medium to and from the cold producing device and the at least one cold consumer. The at least two cooling machines are coupled in parallel to the cold conveyance system such that each of the at least two cooling circuits are thermally coupled to the at least two cooling machines.

Claims 3, 5-10, 12-17, 20 and 22 depend from independent claim 1 and recite additional features of the cooling system. For example, claim 4 requires that the cooling machines use air outside of the pressure cabin of the aircraft as a heat sink in order to expel heat. Claim 23 recites an aircraft in accordance with claim 1.

B. The Deficiencies of the Cited Prior Art

Simadiris is directed to a liquid galley refrigeration system for an aircraft. As shown in Figures 1 and 3, the system includes a galley air cooling unit 18 for cooling food, a chiller unit 30 for expelling heat from the system, and a ducting system coupling the galley air cooling unit 18 and the chiller unit 30. A recirculation unit 32 in the ducting system pumps a working fluid 27 to and from the chiller unit 30 and the galley air cooling unit 18. In this regard,

the working fluid 27 transfers cold through a supply duct 48 and transfers heat through a return duct 50. The Office Action states that Simadiris discloses every element of claim 1. Applicants disagree. Simadiris is deficient.

Claim 1 requires that two cooling circuits are completely independent of each other. Moreover, claim 1 recites that each of the at least two cooling circuits are thermally coupled to the at least two cooling machines. Although Simadiris states that some of the elements of the refrigeration system may be reconfigured as shown in Figures 4-8, none of these illustrated embodiments of Simadiris provides two completely independent cooling circuits that are thermally coupled to the same two (or more) cooling machines in a cold producing device. *See para. [0046].* Simadiris therefore fails to disclose every element of independent claim 1. Furthermore, the system of Simadiris does not provide the advantages of the currently claimed system, which can continue to provide adequate cooling in the event of technical or mechanical failures of either a cooling machines or a cooling circuit.

Additionally, applicants observe that the corresponding patent application of the present application (EP 1,699,687) in the European Patent Office ("EPO") was allowed on September 10, 2008 with claims that are consistent in scope with the current independent claims. A copy of this corresponding EPO application accompanies this response. The USPTO and the EPO have recently begun cooperating in the Patent Prosecution Highway to more quickly allow applications allowed in one patent office to be allowed with similar claims in the other patent office. The EPO did consider the Simadiris reference, but nevertheless found that claims of analogous scope are allowable over these references. Although the Patent Prosecution Highway was not applied for in the current case, applicants respectfully request that the USPTO consider the EPO allowance and follow the spirit of the Patent Prosecution Highway during reconsideration of these rejections.

Thus, independent claim 1 is allowable over Simadiris. Each of dependent claims 3, 5-10, 12-17, 20, 22 and 23 depends from independent claim 1 and includes one or more additional features in combination with the features of claim 1. For substantially the same reasons set forth above with respect to claim 1, and further because the cited prior art fails to teach or suggest the subject matter recited in the claims, applicants respectfully submit that each of claims 3, 5-10, 12-17, 20, 22 and 23 is also patentable. Applicants respectfully request that the rejection of claims 1, 3, 5-10, 12-17, 20, 22 and 23 be withdrawn, and that these claims be allowed.

### III. Claims 4, 11, 18, 19 and 21 are Not Obvious

#### A. The Claims

Claims 4, 11, 18, 19 and 21 depend from independent claim 1 and recite additional features of the cooling system described above. In one example, claim 11 further requires that each of the at least two cooling circuits are thermally coupled to a cold consumer by a heat exchanger. In this regard, claim 11 requires that each of the cooling circuits is coupled to the same cold consumer.

#### B. The Deficiencies of the Cited Prior Art

As discussed in detail above, Simadiris is deficient with respect to independent claim 1 because Simadiris fails to disclose two completely independent cooling circuits that are thermally coupled to the same two cooling machines in a cold producing device. The additionally-cited references (Fischer, Nikly, Pearson, and Temmyo) are cited for other various features of the dependent claims and also fail to disclose cooling systems having two completely independent cooling circuits thermally coupled to the same two cooling machines. For at least these reasons, and also because none of the proposed combinations of references discloses the

subject matter of the dependent claims, claims 4, 11, 18, 19 and 21 are allowable. Applicants respectfully request that the rejections of claims 4, 11, 18, 19 and 21 be withdrawn.

Moreover, claim 11 further recites that each of the cooling circuits is coupled to the same cold consumer. The Office Action states that while Simadiris does not disclose this feature, Nikly allegedly discloses two cooling circuits coupled to an individual cold consumer. Nikly is directed to a vehicle motorization unit including two separate combustion engines 20, 40 having corresponding cooling circuits 21, 41 as shown in Figure 1. Each of the cooling circuits 21, 41 is configured to remove heat from the corresponding engine 20, 40 and deliver it to a heat exchanger 30 coupling the two cooling circuits 21, 41. To this end, the combustion engines 20, 40 operate in alternating fashion such that if the first engine 20 is operating, heat is delivered through the first cooling circuit 21 and the heat exchanger 30 to heat up the non-operative second cooling circuit 41 and second engine 40. By this process, both engines 20, 40 are maintained at proper operating temperature when only one of the engines 20, 40 is running. *See col. 2, lines 48-60.* Effectively, the heat exchanger 30 acts as a heat sink for the cooling circuit 21, 41 that is active.

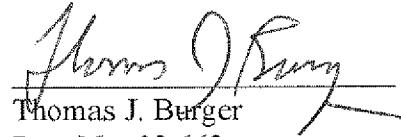
In contrast, claim 11 requires that the two cooling circuits be coupled to the same cold consumer that inherently heats the fluid in the cooling circuits, which is precisely the opposite of a heat sink that removes heat from the fluid in the cooling circuits. The Office Action fails to cite an objective reason for making the relied upon combination of Simadiris and Nikly. Moreover, even if these two references were combined, the resulting apparatus would still be deficient in that it would fail to include all of the elements of claim 11. For at least these additional reasons, claim 11 is allowable over the cited references.

IV. Conclusion

Based on the amendments to the claims and these remarks, applicants respectfully assert that all present claims are in condition for allowance, and respectfully request an allowance without further delay.

Applicants believe that no fee is due for this filing. But if the USPTO disagrees, please consider this as an authorization to charge Deposit Account 23-3000.

Respectfully submitted,



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